

**I Claim:**

1. An operating model for a telephone-based voice-interactive goods and services information and referral service having merchant self-promotion features, comprising:  
an information database provider storing merchant information, said information  
5 including a name, a telephone number, an address, and a promotional information item;  
a merchant interface for inputting merchant information into said database and  
for retrieving and editing said information, at least a component of said merchant  
interface comprising a voice-recognition interface and an internet interface; and  
a consumer interface for inputting voice commands and data having a voice  
10 recognition component and for receiving merchant information and processed  
information from said database in response to said input voice commands and data.

15 2. The operating model in claim 1, wherein said consumer interface comprises a telephone handset.

3. The operating model in claim 2, wherein said consumer also inputs non-voice commands and data from a keypad on said telephone handset.

20 4. The operating model in claim 2, wherein said telephone handset comprises a mobile telephone.

5. A data-base access system comprising:  
a voice recognition engine receiving voice input data and commands from an  
external device over a communication link and converting the voice input into digitally  
25 represented character-based commands and data;

a data base storing a plurality of data items, said data items including a name,  
a telephone number associated with said name, an address associated with said name,  
a category associated with said name, and at least one promotional data item;

30 a search engine searching the database for a particular data item in response to  
said converted command and data;

a speech engine providing a speech-based representation of said particular data  
item identified in said database search, said speech-based representation being selected

from the set consisting of a text-to-speech conversion engine, a prerecorded live voice, and combinations thereof; and

a speech server for communicating said speech-based representation of said particular data item to said external device.

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6. The system in claim 5, further comprising the external device, wherein said external device comprises a voice/speech input device.

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7. The system in claim 5, further comprising the external device, wherein said external device comprises a telephone.

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8. The system in claim 5, further comprising the external device, wherein said external device comprises a device selected from the group consisting of a personal computer, notebook computer, personal data assistant (PDA), information appliance, or combination thereof.

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9. The system in claim 5, wherein said communication link comprises the Internet.

10. The system in claim 5, further comprising means for communicating and validating a promotional audio coupon.

11. The system in claim 5, further comprising means for receiving rating inputs from users and for providing processed ratings inputs to consumers.

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12. The system in claim 5, wherein said name comprises the name of a business, and said at least one promotional item is selected from the set consisting of a voice coupon data item, a business rating information data item, a spoken self-promotion item associated with the name.

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13. The system in claim 5, wherein said system provides audio coupons that operate as incentives for consumers to use the inventive system.

14. The system in claim 5, wherein said system provides means for submitting and retrieving ratings for goods and/or services.

5 15. The system in claim 5, wherein said system assists in providing directory driven wireless commerce.

16. The system in claim 5, wherein said system provide a promotion and advertising channel that has geographical and sociological reach and the speed needed in today's dynamic financial and commercial markets.

10 17. The system in claim 5, wherein said system provide a voice-interactive dynamic market place where individuals call to save and businesses call to publish sales promotions in real-time or near real-time.

15 18. The system in claim 5, wherein said system communicates information on an as requested basis that goes beyond the telephone number and includes address information and non-address and non-telephone number information.

20 19. The system in claim 5, wherein said system provides instant savings with voice coupons published by local merchants.

25 20. The system in claim 5, wherein said system provide an advertising free initial experience where voice or audio coupons are only heard attached to businesses that the caller has requested or searched for.

21. The system in claim 5, wherein said system provide for hands-free navigation with voice commands on any telephone or device supporting telephony.

30 22. The system in claim 5, wherein said system provides a low cost 411-type (or equivalent international operator or non-operator assisted) directory assistance or information with added informational features that is easy to access.

23. The system in claim 5, wherein said system provides benefits to merchants including but not limited to targeted reach, instant promotion, instant or near-term feedback, and an optional free Internet web presence.

5 24. The system in claim 5, wherein said system provides benefits to common carriers and telephone companies who save conventional 411 costs, process higher call volumes, and attract new customers.

10 25. The system in claim 5, wherein said system provides the closest locations for a particular requested category where the location of the caller is known from a caller location input, cellular signal triangulation, GPS position determination, or other position or proximity location means.

15 26. The system in claim 5, wherein said system provides means for a merchant to interact with the system using either voice or web interface and select templates for the type of social, economic, political, age, gender, profession, or other image the merchant wants to portray and the type of promotion message the merchant wants to publish with a small number of mouse clicks, key strokes, or voice commands and prompts.

20 27. The system in claim 5, wherein said system provides means for establishing user groups and communities based on lifestyles, usage patterns, interests and interest levels so that a registered user can subscribe to a group of multiple groups where merchant listings and other relevant information is given a priority.

25 28. The system in claim 5, wherein said system provides means for obtaining ratings, in which once a caller gets connected to the business through the talk411 service system, after a period of time measured in hours the service calls back the caller to ask for ratings or to collect feedback to improve service, where the caller has either registered to permit this inquiry or does not have caller ID blocked.

30 29. The system in claim 5, wherein said system posts customer testimonials so that future callers can hear these messages as a reference that may help make a choice of

which merchant they want to be connected with, and optionally, as the service gets used callers can leave testimonial messages which the business can choose to post for other users access.

5        30.     The system in claim 5, wherein said system provides means for merchants to post key words on the voice system or internet site which can be used as a search term by the caller and that will be used as a navigation pointer to the posting merchant.

10       31.     The system in claim 5, wherein said system allows merchants to post their promotional message or company information in multiple ways including to record their own, select from a voice talent who would record the text the merchant put in the system using voice, a personal computer, or in any other way; or just type in an let a text-to-speech processor convert it.

15       32.     The system in claim 5, wherein said system provides a coupon aggregation and translation engine and service allowing aggregation of different formatted coupons from online sites and reformat such coupons to a standard format that allows them to be played over the telephone.

20       33.     The system in claim 5, wherein said system provides user call back to remind the user to rate a recently used local merchant service.

25       34.     The system in claim 5, wherein said system provides means for an over the telephone offer for a user to become an instant member to a community or coupon distribution list using email or other communication means once the user asks for a specific category.

30       35.     The system in claim 5, wherein said system provides merchants the ability to identify specials in their "additional information" or "coupon message" that is used to find that merchant when those words are used over the phone in the key word search mode

36. The system in claim 5, wherein said system provides system and method for publishing secret words in local newspapers, Internet chat rooms and other community oriented online and offline boards, where they can be used on the phone or on our web site as a password to enter a sweepstake or win a prize, and to thereby provide a beneficial marketing tactic to increase sales of print papers and increase traffic to online portals.

37. The system in claim 5, wherein said system provides voice coupon targeting based on area code and prefix, city, geographically coded location, GPS location, zip code, cross streets, vicinity of a milestone, major tourist areas, major landmarks, airports, night clubs, entertainment centers, shopping malls, restaurants, and the like.

38. The system in claim 5, wherein said system provides interface and connection for the participation of a live agent interaction on a random call basis to provide a surprise element to enhance the user experience, where live agents can be celebrities.

39. The system in claim 5, wherein said system provides an interface for the user to choose or for automatic choice of voice of the Talk411 attendant based on gender, age, interest, and other selection criteria.

40. The system in claim 5, wherein said system provides user choice to select synthesized voice of a celebrity as the automated attendant.

41. The system in claim 5, wherein said system provides system and method for insertion of trivia questions where correct answer wins a prize from a local merchant.

42. A business model for a business in which consumers call into a service using an ordinary telephone and make requests in plain speech for information and positive referrals on goods and/or services, and the service provides responses to the request in plain speech in real-time over the same telephone.

43. The business model in claim 42, further including providing a facility for a business to communicate a self-promotion of the business to the requestor.

44. The business model in claim 42, further including providing an audio promotional coupon to a requestor when the requestor completes a call to a business using the service.

45. The business model in claim 42, further including providing an audio promotional coupon to a requestor when the requestor completes a call to a business using the service.

46. The business model in claim 42, further comprising a voice coupon feature in which voice coupons are sold for distribution, a monthly fee is charged for subscription to the basic service, and additional charges are levied and collected for business category sponsorship.

47. The business model in claim 12, further comprising partnership features in which the providing organization partners with a print yellow page or other business directory publisher and/or with direct marketing organizations to subscribe merchants, businesses, individual professionals, or other organizations.

48. The business model in claim 12, further comprising including organization partners selected from the set consisting of yellow page providers, wireless providers, telephone companies, and conventional 411 call centers, to partner and generate call traffic and thereby increase revenue.

49. The business model in claim 12, further comprising replacing conventional 411 directory assistance providers by the inventive system to save carriers 411 costs and to offer a new shared revenue channel and business model.

50. The business model in claim 12, further comprising soliciting new customers and providing them with value added services.

51. The business model in claim 12, further comprising providing direct marketers with a new coupon or other promotion distribution channel.

52. The business model in claim 12, further comprising bringing a new business to direct marketing organizations through a voice channel of the inventive system.

53. The business model in claim 12, further comprising providing direct marketing organizations are with rapid marketing feedback for their clients and customers.

54. The business model in claim 12, further comprising providing direct marketing organizations with rapid marketing feedback within 24 hours for their clients and customers.

55. The business model in claim 12, further comprising providing increasing the revenues of print yellow page and print business directory publishers by increasing the yellow page or directory ad size sold by virtue of ad space required by a trademark and/or "voice coupon" icon or logo.

56. The business model in claim 12, further comprising providing a business model in which print yellow page or other print directory publishers are provided with increased usage of the yellow pages or directory to show which vendors provide immediate savings.

57. The business model in claim 12, further comprising providing a business model in which yellow page or other print directory publishers are provided with an enhancement in their market positioning by virtue of their providing an more complete and compelling offering.

58. The business model in claim 12, further comprising means for facilitating spread of secret words through the word of mouth initiating from someone in the company to provide access to privileged information, prizes, etc. to enhance the repeat user experience



59. The business model in claim 12, further comprising an information and/or 411 directory assistance call center including an added revenue stream to improve profit margins, to increase call volume by providing a desirable information service, to keep their current carrier customers with value added services, to decrease their operating costs and overhead by reducing the number of human employees, and by overcoming severe local competition on wireless carriers.

60. A data-base access method comprising:

receiving a speech utterance from a user from a communication device;  
converting the speech utterance to a digital symbol representation understandable by a computer and extracting commands and optional data from said converted digital symbol representation;  
searching a database for a particular data item in response to said extracted command and data;  
generating a speech-based representation of said particular data item identified in said database search; and  
serving said speech-based representation of said particular data item to said communication device.

61. The method in claim 60, wherein said communication device comprises a voice/speech input device.

62. The method in claim 60, further comprising communicating and validating a promotional audio coupon to the user at the time said speech-based representation is served to said communication device.

63. The method in claim 60, further comprising receiving rating inputs from users and for providing processed ratings users in response to said speech utterances.

64. The method in claim 60, wherein said received speech utterance comprises natural human speech, and said converting comprises natural language speech processing to extract said commands and data.

5 65. The method in claim 60, wherein said received speech utterance comprises computer synthesized human speech, and said converting comprises voice recognition speech processing to extract said commands and data.

10 66. The method in claim 60, wherein said method provides audio coupons that operate as incentives for consumers to use the inventive method.

67. The method in claim 60, wherein said method provides means for submitting and retrieving ratings for goods and/or services.

15 68. The method in claim 60, wherein said method assists in providing directory driven wireless commerce.

20 69. The method in claim 60, wherein said method provide a promotion and advertising channel that has geographical and sociological reach and the speed needed in today's dynamic financial and commercial markets.

25 70. The method in claim 60, wherein said method provide a voice-interactive dynamic market place where individuals call to save and businesses call to publish sales promotions in real-time or near real-time.

71. The method in claim 60, wherein said method communicates information on an as requested basis that goes beyond the telephone number and includes address information and non-address and non-telephone number information.

30 72. The method in claim 60, wherein said method provides instant savings with voice coupons published by local merchants.

73. The method in claim 60, wherein said method provide an advertising free initial experience where voice or audio coupons are only heard attached to businesses that the caller has requested or searched for.

5 74. The method in claim 60, wherein said method provide for hands-free navigation with voice commands on any telephone or device supporting telephony.

75. The method in claim 60, wherein said method provides a low cost 411-type (or equivalent international operator or non-operator assisted) directory assistance or  
10 information with added informational features that is easy to access.

76. The method in claim 60, wherein said method provides benefits to merchants including but not limited to targeted reach, instant promotion, instant or near-term feedback, and an optional free Internet web presence.  
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77. The method in claim 60, wherein said method provides benefits to common carriers and telephone companies who save conventional 411 costs, process higher call volumes, and attract new customers.

20 78. The method in claim 60, wherein said method provides the closest locations for a particular requested category where the location of the caller is known from a caller location input, cellular signal triangulation, GPS position determination, or other position or proximity location means.

25 79. The method in claim 60, wherein said method provides means for a merchant to interact with the method using either voice or web interface and select templates for the type of social, economic, political, age, gender, profession, or other image the merchant wants to portray and the type of promotion message the merchant wants to publish with a small number of mouse clicks, key strokes, or voice commands and  
30 prompts.

80. The method in claim 60, wherein said method provides means for establishing user groups and communities based on lifestyles, usage patterns, interests and interest levels so that a registered user can subscribe to a group of multiple groups where merchant listings and other relevant information is given a priority.

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81. The method in claim 60, wherein said method provides means for obtaining ratings, in which once a caller gets connected to the business through the talk411 service method, after a period of time measured in hours the service calls back the caller to ask for ratings or to collect feedback to improve service, where the caller has either registered to permit this inquiry or does not have caller ID blocked.

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82. The method in claim 60, wherein said method posts customer testimonials so that future callers can hear these messages as a reference that may help make a choice of which merchant they want to be connected with, and optionally, as the service gets used callers can leave testimonial messages which the business can choose to post for other users access.

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83. The method in claim 60, wherein said method provides means for merchants to post key words on the voice system or internet site which can be used as a search term by the caller and that will be used as a navigation pointer to the posting merchant.

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84. The method in claim 60, wherein said method allows merchants to post their promotional message or company information in multiple ways including to record their own, select from a voice talent who would record the text the merchant put in the system using voice, a personal computer, or in any other way; or just type in an let a text-to-speech processor convert it.

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85. The method in claim 60, wherein said method provides a coupon aggregation and translation engine and service allowing aggregation of different formatted coupons from online sites and reformat such coupons to a standard format that allows them to be played over the telephone.

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86. The method in claim 60, wherein said method provides user call back to remind the user to rate a recently used local merchant service.

5 87. The method in claim 60, wherein said method provides means for an over the telephone offer for a user to become an instant member to a community or coupon distribution list using email or other communication means once the user asks for a specific category.

10 88. The method in claim 60, wherein said method provides merchants the ability to identify specials in their "additional information" or "coupon message" that is used to find that merchant when those words are used over the phone in the key word search mode

15 89. The method in claim 60, wherein said method provides means for publishing secret words in local newspapers, Internet chat rooms and other community oriented online and offline boards, where they can be used on the phone or on our web site as a password to enter a sweepstake or win a prize, and to thereby provide a beneficial marketing tactic to increase sales of print papers and increase traffic to online portals.

20 90. The method in claim 60, wherein said method provides voice coupon targeting based on area code and prefix, city, geographically coded location, GPS location, zip code, cross streets, vicinity of a milestone, major tourist areas, major landmarks, airports, night clubs, entertainment centers, shopping malls, restaurants, and the like.

25 91. The method in claim 60, wherein said method provides interface and connection for the participation of a live agent interaction on a random call basis to provide a surprise element to enhance the user experience, where live agents can be celebrities.

30 92. The method in claim 60, wherein said method provides an interface for the user to choose or for automatic choice of voice of the Talk411 attendant based on gender, age, interest, and other selection criteria.

93. The method in claim 60, wherein said method provides user choice to select synthesized voice of a celebrity as the automated attendant.

94. The method in claim 60, wherein said method provides means for insertion of trivia questions where correct answer wins a prize from a local merchant.

95. A computer program product for use in conjunction with a computer system, the computer system including a processor and memory associated with said processor for executing instructions, said computer program product comprising a computer readable storage medium and a computer program mechanism embedded therein, the computer program mechanism providing a voice-recognition based data matching and retrieval capability, the computer program mechanism comprising:

a program module that directs the computer system, to function in a specified manner, the program module including instructions for:

receiving a speech utterance from a user from a communication device;

converting the speech utterance to a digital symbol representation understandable by a computer and extracting commands and optional data from said converted digital symbol representation;

searching a database for a particular data item in response to said extracted command and data;

generating a speech-based representation of said particular data item identified in said database search; and

serving said speech-based representation of said particular data item to said communication device.

96. The computer program product of claim 95, wherein said computer system comprises a computer server.

97. The computer program product of claim 96, wherein said computer system comprises a hardware/software based voice recognition engine.

98. The computer program product of claim 97, wherein said program module further includes instructions for providing a voice coupon to a merchant coupled with a request and a match to the database.

5        99.        The computer program product of claim 98, wherein said communication device comprises a telephone and said user communicates with voice to affect said communication.

100. The computer program product in claim 99, wherein said program module  
10 further includes instructions for identifying a geographical region of said user and for  
matching to businesses within said database matching a geographical proximity to the  
caller.